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| 09/936,117   | 02/01/2002  | Thomas Hofler        | P/2107-186                       | 9525             |
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| OSTROLENK FABER GERB & SOFFEN<br>1180 AVENUE OF THE AMERICAS<br>NEW YORK, NY 100368403 |             |                      | EXAMINER<br>TSANG FOSTER, SUSY N |                  |
|  |             |                      | ART UNIT                         | PAPER NUMBER     |
|  |             |                      | 1745                             |                  |

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary****Application No.**

09/936,117

**Applicant(s)**

HOFER ET AL.

**Examiner**

Susy N Tsang-Foster

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-11 and 14-42 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1,3-11 and 14-42 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) ☐ Notice of Informal Patent Application (PTO-152)  
 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office Action is responsive to the amendment filed on 8/16/2004. Claims 1, 3-6, 8, 10, 11, 15, 18-20, 26, 28-31, and 33 have been amended. Claims 34-42 have been added. Claims 2, 12, and 13 have been cancelled. Claims 1, 3-11, and 14-42 are pending and are finally rejected for reasons necessitated by applicant's amendment.

### ***Claim Objections***

2. Claims 21 and 27 are objected to because of the following informalities: Claims 21 and 27 should begin with a capital letter. Appropriate correction is required.

3. Claims 11, 14, 36, and 37 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

In claim 11, the limitation "in which the electron-conducting material is an electron-conducting woven support" does not appear to further limit claim 1 which recites that the braid comprises carbon fibers or metal wires which is an electron-conducting woven support.

Dependent claim 14 only further limits the metal when the metal wires are positively recited in claim 14 because claim 14 does not actually require that the braid be comprised of metal wires but only recites what the metal can be made of.

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Dependent claims 36 and 37 only further limits claim 1 when the bundles of carbon fibers are selected as the material comprising the braid of electron conducting material and claims 36 and 37 do not actually require that the braid be comprised of bundles of carbon fibers.

*Claim Rejections - 35 USC § 112*

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1, 3-11, and 14-42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 1, the limitation, “bundles of carbon fibers wherein individual carbon fibers of the bundles are replaced by metal wire bundles” is not in the original disclosure.

In claims 4, 5, 8-10, 28-34, and 40-42, the limitations “braid (3) of bundles and/or filaments or fibers of an electron-conducting material”, “a further braid (11) of bundles and/or filaments or fibers of an electron-conducting material”, and “in which bundles and/or filaments or fibers of an electron-conducting material are braided” do not appear to be in the original

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disclosure. Instead, the original disclosure (see page 4 of the specification) states “a tubular braid of bundles and/or filaments of an electron conducting material”.

Page 10 of the original specification states “a braid of bundles and/or filaments of an electron-conducting material”.

Claims depending from claims rejected under 35 USC 112, first paragraph are also rejected for the same.

6. Claims 4, 5, 8-10, 28-34, and 40-42 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a braid of bundles of carbon fibers and/or metal wires of an electron conducting material, does not reasonably provide enablement for all electron conducting materials. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

The specification only discloses carbon fibers and metal wires as the only electron-conducting materials that can be braided. It would be undue experimentation to one of ordinary skill in the art to determine what other electron-conducting material can be braided that would be encompassed by applicant's claimed invention.

Claims depending from claims rejected under 35 USC 112, first paragraph are also rejected for the same.

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7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 3-11, and 14-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the limitation “the layer, which faces toward the outside of the composite” is indefinite because the layer is part of the composite and cannot face part of itself. Furthermore, the inner surface of the outer layer can face the inside of the composite and the outer surface of the outer layer would face the outside of the composite.

In claim 1, the limitation “bundles of carbon fibers wherein individual bundles are replaced by metal wires” is indefinite because it is unclear if all or a portion of the bundles of carbon fibers are replaced by metal wires. If all of the individual bundles are replaced by metal wires, the bundles of carbon fibers become bundles of metal wires which would be identical to limitation (e).

In claim 1, the limitation “bundles of carbon fibers wherein individual carbon fibers of the bundles are replaced by metal wire bundles” is indefinite because it is unclear if all or a portion of the individual carbon fibers of the carbon fiber bundles are replaced by metal wire bundles. If all of the individual carbon fibers of the carbon fiber bundles are replaced by metal wire bundles, then bundles of metal wire bundles would results.

In claim 1, the limitation “bundles of carbon fibers wherein individual carbon fibers of the bundles are replaced by metal wires” is indefinite because it is unclear if all or a portion of

individual carbon fibers of the carbon fiber bundles are replaced by metal wires. If all of the individual carbon fibers in the bundles of carbon fibers are replaced by metal wires, the bundles of carbon fibers become bundles of metal wires which would be identical to limitation (e).

Claim 1 is also indefinite because it is unclear what the relationship is between the electron conducting material and the carbon fibers and metal wires recited in instant claim 1 and it unclear if the braid of carbon fibers or metal wires is the braid of electron-conducting material recited in the claim.

Claim 3 is indefinite because it depends from a cancelled claim.

Claim 4 recites the limitation "the braid(3) of bundles and/or filaments or fibers of an electron-conducting material" in lines 3. There is insufficient antecedent basis for this limitation in the claim.

In claim 11, the limitation "in which the electron-conducting material is an electron-conducting woven support" is indefinite because it is unclear if the electron-conducting woven support is the same as the braid of electron-conducting material recited in claim 1 and/or the braid of carbon fibers or metal wires.

Claim 22 recites the limitation "the braid (11, 17) which faces the outer surface of the tubular composite" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 23 recites the limitation "the braid (3) which faces the lumen (19) of the tubular composite" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

In claim 28, the limitation "in which bundles and/or filaments or fibers of an electron-conducting material are braided to form a hose from a braid of this electron conducting material" is indefinite because it is unclear if the braid of carbon fibers or metal wires recited in claim 1 from which claim 28 depend is the electron-conducting material recited in instant claim 28.

In claim 28, the limitation "then an ion-conducting material is applied to the outer side of the braid" is indefinite because it is unclear if the ion-conducting material recited in instant claim 28 is the same ion-conducting material recited in claim 1 from which claim 28 depend.

In claim 28, the limitation "wherein at least one catalyst layer is applied to the hose" is indefinite because it is unclear what part of the hose the catalyst layer is applied.

Claim 29 recites the limitation "the outwardly oriented catalyst layer" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim.

In claim 30, the limitation "wherein bundles and/or filaments or fibers of an electron-conducting material are braided to form a hose from a braid of the electron conducting material" is indefinite because it is unclear if the electron-conducting material recited in instant claim 30 is the same electron-conducting material recited in claims 1 and 28 from which it depends.

In claim 30, the limitation "following which a braid of electrically insulating or ion-conducting fibers are applied as a spacer, followed by a temporary intermediate layer which



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serves as a base for application of an ion-conducting layer” is indefinite because it is unclear if the ion-conducting fibers or ion-conducting layer recited in claim 30 is the same as the ion-conducting material recited in claims 28 and 1 from which claim 30 depend.

In claim 30, the limitation “wherein bundles and/or filaments or fibers of an electron-conducting material are braided to form a hose from a braid of the electron conducting material” is indefinite because it is unclear if the braid of carbon fibers or metal wires recited in claim 1 from which claim 30 depends is the electron-conducting material recited in instant claim 30.

Claim 33 recites the limitation "after individual hollow fibers have been joined to form a module" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claim 33 is also indefinite because it is unclear where the individual hollow fibers are joined in the tubular composite.

Claims depending from claims rejected under 35 USC 112, second paragraph are also rejected for the same.

### ***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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10. Claims 1, 11, 14-16, 28, 35, and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by McMills et al. (US Patent No. 5,490,803) and as evidenced by Visser (US Patent No. 4,694,122) and Gordon et al. (USGS Primer for Acid Rain-"USGS Tracks Acid Rain", [Fact Sheet FS-183-95], [online].U.S. Dept. of the Interior, U.S. Geological Survey. [retrieved on 2004-10-31]. Retrieved from the Internet: <URL: <http://bqs.usgs.gov/precip/reports/arfs.htm>>).

McMills et al. discloses a coaxial cable that includes a central axial conductor and an outer conductor which is disposed concentrically around the central conductor which is a wire (col. 1, lines 40-43). A low-loss, high dielectric insulation material, such as plastic foam, separates the two conductors and an insulating jacket is often provided over the concentric conductor to provide electrical insulation, shielding, and physical protection to the cable (col. 1, lines 44-48). The concentric conductor may be a single continuous element or more commonly, it is a composite of several layered elements of thin conductive foil, wire braid or similar material that are generally made from an aluminum alloy (col. 1, lines 48-53 and Figure 3). The coaxial cable has two end-side openings through which the central conductor passes. The cable can be used in outdoor service (col. 4, lines 33-36). McMills does not explicitly disclose that a layer of ion-conducting material is arranged above the braid of the concentric conductor and that the braid comprises a bundle of wires.

Visser discloses that the term metal "braid" as used in the coaxial cable art means a bundle of metal wires such as copper that are braided as illustrated in Figure 2 of the reference (see reference character 32 and col. 2, lines 40-56). Thus, the wire braid in the coaxial cable of

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McMills et al. is inherently made from a bundle of aluminum or aluminum alloy wires braided together.

Furthermore, applicant states on page 9 of the instant specification that the ion-conducting material which can be used in the invention may be solid, or liquid, for example, an aqueous salt solution.

When the cable is used in the outdoor service, the cable is exposed to rain and rain is a salt solution because it contains salts such as nitrates as evidenced by Gordon et al. (USGS Primer for Acid Rain-“USGS Tracks Acid Rain”, [Fact Sheet FS-183-95], [online]. U.S. Department of the Interior, U.S. Geological Survey. [retrieved on 2004-10-31]. Retrieved from the Internet: <URL: <http://bqs.usgs.gov/precip/reports/arfs.htm>>).

Thus, when the cable is used outdoors, a layer of rain (which is an ion-conducting material) is formed on the surface of the cable when it rains. During good weather, the layer of ion-conducting material (sheet of rain on the exterior of the coaxial cable) is dried.

11. Claims 1, 11, 14-16, 28, 35, and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Brake et al. (US Patent No. 6,288,328) and as evidenced by Gordon et al. (USGS Primer for Acid Rain-“USGS Tracks Acid Rain”, [Fact Sheet FS-183-95], [online]. U.S. Department of the Interior, U.S. Geological Survey. [retrieved on 2004-10-31]. Retrieved from the Internet: <URL: <http://bqs.usgs.gov/precip/reports/arfs.htm>>).

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Brake et al. discloses a coaxial cable that includes a central axial conductor and an outer concentric metallic braid 15 which is disposed concentrically around the central conductor which is a wire (Figures 1 and 5 and col. 3, lines 9-58). The metallic braid comprises a weave of tinned-copper or aluminum wires (col. 3, lines 49-58). As seen in Figures 1 and 5, the metallic braid comprises a bundle of wires.

The coaxial cable has two end-side openings through which the central conductor passes. The cable can be used in outdoor service since it is weather-proofed (col. 1, lines 50-57).

Brake et al. do not explicitly disclose that a layer of ion-conducting material is arranged above the braid of the concentric conductor.

However, applicant states on page 9 of the instant specification that the ion-conducting material which can be used in the invention may be solid, or liquid, for example, an aqueous salt solution.

When the cable is used in the outdoor service, the cable is exposed to rain and rain is a salt solution because it contains salts such as nitrates as evidenced by Gordon et al. (USGS Primer for Acid Rain-“USGS Tracks Acid Rain”, [Fact Sheet FS-183-95], [online]. U.S. Department of the Interior, U.S. Geological Survey. [retrieved on 2004-10-31]. Retrieved from the Internet: <URL: <http://bqs.usgs.gov/precip/reports/arfs.htm>>).

Thus, when the cable is used outdoors, a layer of rain (which is an ion-conducting material) is formed on the surface of the cable when it rains. During good weather, the layer of ion-conducting material (sheet of rain on the exterior of the coaxial cable) is dried.

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***Response to Arguments***

12. Applicant's arguments with respect to claims 1, 3-11, and 14-42 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (571) 272-1293. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (571) 272-1292.

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The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

st/ *Susy Tsang-Foster*

Susy Tsang-Foster  
Primary Examiner  
Art Unit 1745